

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1 – 15 (canceled)

Claim 16 (previously presented) A method of polymerizing aminoacid-N-carboxyanhydride monomers having a ring with a O-C₅ and a O-C₂ anhydride bond comprising:

(a) combining a first NCA monomer with an initiator molecule complex comprised of:

(i) a low valent metal capable of undergoing an oxidative addition reaction wherein the oxidative addition reaction formally increases the oxidation state by two electrons; and

(ii) an electron donor comprising a Lewis base;

(b) allowing the initiator molecule to:

(i) open the ring of the first NCA through oxidative addition across either the O-C₅ or O-C₂ anhydride bond;

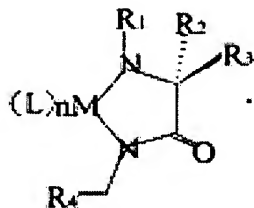
(ii) combine with a second NCA monomer, to form an amido-containing metallacycle; and

(c) allowing a third NCA monomer to combine with the amido containing metallacycle so that:

(i) the amido nitrogen of the amido containing metallacycle attacks the carbonyl carbon of the NCA and the NCA is added to the polyaminoacid chain; and

(ii) the amido containing metallacycle is regenerated.

Claim 17 (previously presented) The method of claim 16 wherein the amido containing metallacycle is of the general formula:



wherein M is the low valent transition metal;

L is the Lewis Base ligand;

R1, R2 and R3 comprises a side chain of an amino acid selected from the group consisting of alanine, arginine, asparagine, aspartic acid, cysteine, glutamic acid, glutamine, glycine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, proline, serine, threonine, tryptophan, tyrosine and valine; and

R4 is the polyaminoacid chain.

Claim 18 (previously presented) The method of claim 16 wherein the efficiency of the initiator is controlled by allowing the reaction to proceed in a solvent selected for its ability to influence the reaction.

Claim 19 (previously presented) The method of claim 17 wherein the solvent is selected from the group consisting of ethyl acetate, toluene, dioxane, acetonitrile, THF and DMF.

Claim 20 (previously presented) The method of claim 16, wherein the α -aminoacid-N-carboxyanhydride monomer is selected from the group consisting of alanine, arginine, asparagine, aspartic acid, cysteine, glutamic acid, glutamine, glycine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, proline, serine, threonine, tryptophan, tyrosine and valine.

Claims 21 - 62 (canceled)